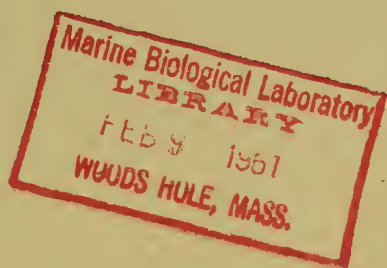


GENERAL EMBRYOLOGICAL INFORMATION SERVICE

1960

(supplement
to the
eighth issue)



ISSUED BY THE HUBRECHT LABORATORY

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on behalf of the
Foundation
„General Embryological Information Service”

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INTRODUCTION

In the interest of the subscribers the following remarks are made on the contents of this Supplement.

This year contact has been established with the Institute of Experimental Biology of the Academy of Medical Sciences of the U.S.S.R., Moscow. As our readers are no doubt interested in the work carried out at this Institute, it was not considered desirable to postpone publication of the data till the next full issue. They have therefore been included in the list of addresses.

In connection with the decision that the periodical will henceforth embrace both botanical and zoological developmental biology (see eighth full issue, Introduction), special attention is drawn to two important books, viz. "Embryogenesis in plants", by C. W. Wardlaw, 1955 (reviewed in seventh full issue, 1957, page 220) and "Plant morphogenesis", by E. W. Sinnott, 1960 (reviewed in the present Supplement, page 36). A third book, of somewhat more limited importance in this connection, is that by R. J. Gautheret (reviewed in this Supplement, page 30).

Information concerning the team work and building projects of the Hubrecht Laboratory may be found on page 15.

P. D. NIEUWKOOP

Changes of address, and new addresses

- ANDRES, G. Dr., M.I.I.E. — Zool. Inst. der Johannes Gutenberg-Univ., Saarstr. 21, MAINZ, Deutschland.
- AVERKINA, R. F. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
- a. The development of antigenic properties in the course of onto- and phylogenesis.
- BEER, Sir G. R. de F.I.I.E, Prof. — 39 Shrewsbury House, Cheyne Walk, LONDON, S.W. 3, England
- BEERMANN, W. M.I.I.E. — Max Planck Inst. für Biol., Spemannstr. 34, TÜBINGEN, Württemberg, Deutschland
- BEETSCHEN, J.-C. Dr. — Lab. de Biol. génér., Fac. des Sci., 39 Allée Jules Guesde, TOULOUSE (Hte-Gne), France
- BODENSTEIN, D. Ph.D., M.I.I.E. — Dept. op Biol., Univ. of Virginia, CHARLOTTESVILLE, Va., U.S.A.
- BORGHESE, E. M.D., Ph.D., M.I.I.E. — Div. Biol. del C.N.R.N., Lab. del Sincrotrone, FRASCATI (Roma), Italia
- BRAHMA, S. K. M.Sc., D.Phil., Ph.D. — Chittaranjan Nat. Cancer Res. Center, 37 S. P. Mookerjee Road, CALCUTTA 26, India
- CASPARI, E. W. Ph.D., M.I.I.E., Prof. — Biol. Lab., Coll. of Arts and Sci., Univ. of Rochester, River Campus Station, ROCHESTER 20, N.Y., U.S.A.
- CHALKLEY, D. T. B.A., M.A., Ph.D. — Nat. Cancer Inst., BETHESDA, Md., U.S.A.
- CHANG, C. Y. M.S., Ph.D., M.I.I.E. — Inst. of Zool., Acad. Sinica, Haitien, PEKING (53), China
- DOBROKHOTOV, V. N. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
- a. Regulation of cell division by environmental factors in different stages of development. (*Amphibia*, *Mammalia*)
- FLICKINGER, R. M.I.I.E. — Dept. of Zool., State Univ. of Iowa, IOWA CITY, Iowa, U.S.A.
- temporarily: Lab. d'Embryol. et Tératol. expér. du C.N.R.S., 49bis Avenue de la Belle Gabrielle, NOGENT sur Marne (Seine), France
- GATES, A. H. Ph.D. — Dept. of Obstetrics & Gynecol., Stanford Med. Center, PALO ALTO, Calif., U.S.A.
- GREGG, J. R. B.S., Ph.D., M.I.I.E. — Dept. of Zool., Duke Univ. DURHAM, N.C., U.S.A.
- HAMBURGER, V. Ph.D., F.I.I.E., Prof. — Dept. of Zool., Washington Univ., ST LOUIS 30, Mo., U.S.A.
- HÄMMERLING, J. M.I.I.E. — Max Planck Inst. für Meeresbiol., Anton Dohrnweg, WILHELMSHAFEN, Deutschland
- †HARRISON, R. G. M.D., Ph.D., Sc.D., L.L.D., F.I.I.E., Prof. (Emer.) — Osborn Zool. Lab., Yale Univ, NEW HAVEN 11, Conn., U.S.A. (deceased)

- JURAND, A. Dr.Biol. — Biol. and Embryol. Inst., Med. Acad., ul. Koper-
nika 7, KRAKOW, Poland
- KONYUKHOV, B. V. Dr. — Inst. of Exper. Biol. of the Acad. of Med.
Sci. of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
a. Development of the eye in connection with problems of physiological
genetics. (*Aves, Mammalia*)
- LAGUCHEV, S. S. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci.
of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
a. Physiological regeneration and its association with malignant growth,
studied by cytological methods.
- LEBLOND, C. P. M.D., Ph.D., Prof. — Dept. of Anat., McGill Univ.,
MONTREAL, Quebec, Canada
- LEHMAN, H. E. M.A., Ph.D., M.I.I.E. — Dept. of Zool., Univ. of North
Carolina, CHAPEL HILL, N.C., U.S.A.
- LIOSNER, L. D. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci. of
the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
a. Reparative and physiological regeneration. (*Mammalia*)
- LUDWIG, D. A.B., Ph.D., Prof. — Biol. Lab., Fordham Univ., NEW
YORK 58, N.Y., U.S.A.
- MANN, T. M.I.I.E. — Dept. of Vet. Clin. Studies, Univ. of Cambridge,
CAMBRIDGE, England
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slavia
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- MINTZ, Miss B. A.B., M.S., Ph.D., M.I.I.E. — Inst. for Cancer Res.,
7701 Burholme Ave., PHILADELPHIA 11, Pa., U.S.A.
- MURRAY, Mrs. M. R. M.I.I.E. — Dept. of Anat., Columbia Univ., NEW
YORK, N.Y., U.S.A.
- MURRAY, P. D. F. B.Sc., M.A., D.Sc., F.I.I.E., Prof. — Dept. of Zool.,
Univ. of N.England, ARMIDALE, N.S.W., Australia
- NEWTH, D. R. B.Sc., Ph.D., M.I.I.E., Prof. — Dept. of Biol. as Applied
to Med., Middlesex Hosp. Med. School, LONDON W. 1, England
- POHLEY, H.-J. Dr. — Inst. für Entwicklungsphysiologie, Univ. zu Köln,
Gyrhofstr. 17, KÖLN-Lindenthal, Deutschland
— till March 1961: Shanklin Lab of Biol., Wesleyan Univ., MIDDLE-
TOWN, Conn., U.S.A.
- PRICE, Miss D. M.I.I.E., Assoc. Prof. — Dept. of Zool., Biol. Sci. Div.,
Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- RUNNER, M. N. Ph.D., M.I.I.E. — Section of Developmental Biol., National
Science Foundation, WASHINGTON 25, D.C., U.S.A.
- SCHMIDT, G. A. Dr., M.I.I.E., Prof. — Inst. of Animal Morphol., Acad.
of Sci. of the U.S.S.R., 33 Lenin Avenue, MOSCOW, V-71, U.S.S.R.
- SENSENI, E. C. B.A., M.S., Ph.D., M.I.I.E., Prof. — Dept. of Anat.,
Med. Center, Univ. of Alabama, BIRMINGHAM 3, Ala., U.S.A.
- SENTEIN, P. M.I.I.E. — Lab. d'Histol., Fac. de Med., MONTPELLIER,
France
- SHIRAKAMI, K. I. M.I.I.E. — Dept. of Biol., Yamanashi Univ., KOFU,
Japan

- SOROKIN, V. I. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
 a. Development of cardio-vascular system and blood elements, studied by micro-cinematography. *Gallus spec. (Aves)*
- STEINBERG, M. S. B.A., M.A., Ph.D. — Dept. of Biol., The Johns Hopkins Univ., Charles and 34th Sts., BALTIMORE 18, Md., U.S.A.
- SUGINO, H. D.Sc., M.I.I.E., Prof. — Biol. Lab., Osaka Liberal Arts Univ., Tennoji-ku, OSAKA, Japan
- TARKOWSKI, A. K. M.I.I.E. — Zool. Inst., Univ. of Warsaw, WARSZAWA, Poland
- VINCENT, W. S. M.I.I.E. — Dept. of Anat., Coll. of Med., State Univ. of New York, 766 Irving Ave., SYRACUSE, N.Y., U.S.A.
- VOLKOVA, L. S. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
 a. Immunobiological relations between mother and fetus, including the problem of haemolytic disease of the newborn. (*Mammalia*)
- VYASOV, O. E. Dr. — Inst. of Exper. Biol. of the Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya 8, MOSCOW, U.S.S.R.
 a. Immunology of morphogenetic processes (antigenic properties of embryonic and regenerating tissues; the role of antigen-antibodytype reactions in the mechanisms of growth and differentiation of tissues, and in aggregation and movement of cells).
- WARKANY, J. M.I.I.E. — Child. Hosp. Research Found., Univ. of Cincinnati, CINCINNATI, Ohio, U.S.A.
- WILLIAMS, C.M. M.I.I.E. — Biol. Lab., Harvard Univ., CAMBRIDGE, Mass., U.S.A.

„SUPPLY AND DEMAND” SERVICE

for Laboratory Animals

Transactions should be carried out directly between the interested parties. We do not take any responsibility either for the transactions themselves, or in matters relating to prices, in- and export regulations, animal protection regulations etc.

With each new list all previous lists become invalid.

A. LIST OF SPECIES AVAILABLE

with numbers referring to List B.

Unless otherwise indicated, most items available throughout the year.

GENERAL		Arachnoidea	
Australian spp.	17 ¹⁾	Argiope sp.	10
Marine animals (Gulf of Naples)	31	Latrodectus sp.	10
		Tarantulas sp.	10
PROTISTA		Myriopoda	
Amoeba proteus	22 ²⁾	Julus sp.	10
Didymium nigripes	4 ³⁾	Scolopendra sp.	10
Paramecium bursaria	27	Spirobolus sp.	10
Physarella oblonga	4 ³⁾	Insecta	
Stentor sp.	9 ⁴⁾	Aedes aegypti	37
VERMES		Anasa sp.	10
Dugesia gonocephala	15 ⁵⁾	Anopheles gambiae	37
Enchytraeus albidus	22 ²⁾	Anopheles maculipennis	37
Euplanaria polychroa (clone)	19	Anopheles stephensi	37
Haemopis grandis	10	Anthera pernyi (May: eggs; winter: diapause pupae)	18 ⁷⁾
Lumbricus terrestris	10	Blatella germanica	22 ²⁾
Macrobdella decora	10	Cecropia sp. (cocoons)	10
Planaria vitta (clone)	19	Cynthia sp. (cocoons)	10
ARTHROPODA		Dixippus morosus	22 ²⁾
Crustacea		Drosophila spp.	14 ⁸⁾ , 30
Artemia (gracilis?)	3 ⁶⁾	Drosophila melanogaster	14 ⁸⁾
Artemia salina (S-strains)	30	Drosophila melanogaster (wild and mutant types)	11 ⁹⁾
Cambarus sp.	10	Drosophila virilis	14 ⁸⁾

¹⁾ on special request or on exchange basis

²⁾ in exchange for Pipa americana

³⁾ in exchange for other Eumycetozoina in lab. culture

⁴⁾ in exchange for other spp. or races of Stentor

⁵⁾ in exchange for Turbellaria spp. from Europe, sexual and asexual animals, fixed

⁶⁾ in exchange for A. salina eggs

⁷⁾ in exchange for Platysamia cecropia

⁸⁾ in exchange for Dros. spp.

⁹⁾ in exchange for wild type Dros. mel.

<i>Ephestia kühniella</i> (normal and mutant strains)	24
<i>Ephestia kühniella</i> (mutant strains)	2
Formicidae	10
<i>Formica polyctena</i> (Apr.-June: young queens)	28 ¹⁰⁾
<i>Formica rufa</i> (Apr.-June: young queens)	28 ¹⁰⁾
<i>Habrobracon juglandis</i> (stock no. 33)	7
<i>Lethocerus</i> sp.	10
<i>Melanoplus</i> sp.	10
<i>Musca domestica</i> (NAIDM species)	5
Odonata	10
<i>Oncopeltus fasciatus</i>	6
<i>Ornithodoros moubata</i>	37
<i>Periplaneta americana</i> 22 ²⁾	24
<i>Phyllophaga</i> sp.	10
<i>Pieris rapae</i>	10
<i>Plodia interpunctella</i>	27
<i>Polyphemus</i> sp. (cocoons)	10
<i>Ranatra</i>	10
Reduviidae (various spp.)	37
<i>Tenebrio molitor</i>	22 ²⁾
<i>Tetradontophora bielensis</i>	36
<i>Xenopsylla cheopis</i>	37
<i>Zaprionus ghesquierei</i>	35
<i>Zaprionus vittiger</i>	35

MOLLUSCA

<i>Anodonta</i> sp.	10
<i>Campeloma</i> sp.	10
<i>Goniobasis</i> sp.	10
<i>Limax</i> sp.	10
<i>Lymnaea palustris</i> (photo-periodic, breeds on long days)	2
<i>Physa</i> sp.	10
<i>Planorbis</i> sp.	10

TENTACULATA

<i>Bugula avicularia</i>	26
<i>Bugula neritina</i>	26
PISCES	
<i>Onchorynchus</i> sp. (Oct.-Dec.)	1 ¹¹⁾
Poeciliidae	23
<i>Raia</i> sp.	1 ¹¹⁾
<i>Salmo</i> sp. (March-Apr.)	1 ¹¹⁾

AMPHIBIA

Urodela

<i>Ambystoma punctatum</i> (eggs, Apr.-May)	8 ¹²⁾
<i>Ambystoma tigrinum</i>	10
<i>Amphiuma</i> sp.	10
<i>Hynobius retardatus</i> (Apr.-May)	16
<i>Necturus maculosus</i>	10
<i>Pleurodeles waltlii</i>	29 ¹³⁾
<i>Taricha torosa</i> (March-Apr.)	1 ¹¹⁾
<i>Triturus cristatus</i> (Jan.-Apr.)	34
<i>Triturus cristatus</i> Danubialis	29 ¹³⁾
<i>Triturus pyrrhogaster</i>	12 ¹⁴⁾
<i>Triturus taeniatum</i> (Jan.-Apr.)	34
<i>Triturus torosus</i>	10
<i>Triturus viridescens</i>	10
<i>Triturus vulgaris</i>	29 ¹³⁾

Anura

<i>Acris gryllus</i>	10
<i>Alytes obstetricans</i> (March-Apr.)	21 ¹⁵⁾
<i>Bombina bombina</i>	29 ¹³⁾
<i>Bombina variegata</i>	29 ¹³⁾
<i>Bufo americanus</i>	10
<i>Bufo bufo</i> (March-Apr.)	21 ¹⁵⁾
<i>Bufo marinus</i>	10
<i>Bufo terrestris</i>	10
<i>Bufo vulgaris</i> (Apr.-Nov.)	13
<i>Discoglossus pictus</i> (March-June; Nov.-Dec.)	32 ¹⁶⁾

²⁾ in exchange for *Pipa americana*

¹⁰⁾ in exchange for various *Attini* (young colonies with queens)

¹¹⁾ in exchange for early reptilian stages, any spec.

¹²⁾ for sale or in exchange for American *A. tigrinum* eggs

¹³⁾ in exchange for *Xenopus laevis*, *Anolis carolinensis*

¹⁴⁾ in exchange for *Tr. c. cristatus*, *Tr. vulgaris*

¹⁵⁾ in exchange for *Hyla* (fixed stages)

¹⁶⁾ in exchange for *Ambystoma mexicanum*

Discoglossus pictus (Jan.-June)	33	Amyda ferox	10
Hyla arborea	29 ¹³⁾	Chelydra sp.	10
Hyla cinerea	10	Chrysemys picta	10
Hyla crucifer	10	Clemmys spp.	10
Hyla regilla (March-Apr.)	1 ¹¹⁾	Emys spp.	10
Phrynosoma sp.	10	Emys orbicularis	29 ¹³⁾
Rana catesbeiana	10	Graptemys sp.	10
Rana catesbiana (Apr.-Nov.)	13	Kinosternon sp.	10
Rana clamitans	10	Macrochelys sp.	10
Rana dalmatina (March-Apr.)	21 ¹⁵⁾	Malaclemys terrestris	10
Rana dalmatina	29 ¹³⁾	Pseudemys elegans	10
Rana esculenta	29 ¹³⁾	Sternotherus sp.	10
Rana nigromaculata (Apr.-Nov.)	13	Terrapene spp.	10
Rana palustris	10	Crocodylia	
Rana pipiens	10	Alligator mississippiensis	10
Rana pipiens sphenocephala	10	Caiman sp.	10
Rana rugosa	13	Lacertilia	
Rana sylvatica	10	Anolis carolinensis	10
Scaphiopus Holbrookii	10	Lacerta muralis	29 ¹³⁾
Xenopus laevis 20 ¹⁷⁾ , 22 ²⁾ , 25 ¹⁶⁾		Lacerta viridis	29 ¹³⁾
REPTILIA		Sceloporus spp.	10
Chelonia		Ophidia	
		Thamnophis sp.	10

The supply of *Aves* and *Mammalia* is covered by the "International Committee on Laboratory Animals" (Hon. Executive Secr.: Dr. W. Lane-Petter, Laboratory Animals Centre, M.R.C. Laboratories, Woodmansterne Road, Carshalton, Surrey, England).

²⁾ in exchange for *Pipa americana*

¹¹⁾ in exchange for early reptilian stages, any spec.

¹³⁾ in exchange for *Xenopus laevis*, *Anolis carolinensis*

¹⁵⁾ in exchange for *Hyla* (fixed stages)

¹⁶⁾ in exchange for *Ambystoma mexicanum*

¹⁷⁾ in exchange for *Pleurodeles Waltlii*

B. LIST OF NAMES AND ADDRESSES (geographical order)

N. A M E R I C A

Canada

- 1 Dr. P. FORD, Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C.

United States

- 2 DEPT. OF BIOLOGY, Wesleyan Univ., MIDDLETOWN, Conn.
- 3 DEPT. OF BIOLOGY, Wayne State Univ., DETROIT 2, Mich.

- 4 DEPT. OF ZOOLOGY, Univ. of Minnesota, MINNEAPOLIS 14, Minn.
- 5 BELLEVUE MEDICAL CENTER, New York Univ., 550 First Ave., NEW YORK 16, N.Y.
- 6 BIOLOGICAL LAB., Fordham Univ., NEW YORK 58, N.Y.
- 7 BIOLOGICAL DEPT., Southwestern at Memphis, MEMPHIS 12, Tenn.
- 8 DEPT. OF ANATOMY, Coll. of Med., Univ. of Vermont, BURLINGTON, Vt.
- 9 Dr. Vance TARTAR, Univ. of Washington, NAHCOTTA, Wash.
- 10* THE LEMBERGER CO., P.O. Box 482, OSHKOSH, Wis.

ASIA

India

- * VITA LIMITED, 9 Ludlow Castle Road, DELHI

Japan

- 11 NATIONAL INSTITUTE OF RADIOLOGICAL SCIENCES, Div. of Genetics, 250, Kurosuna-cho, CHIBA
- 12 ZOOLOGICAL LABORATORY, Hiroshima Univ., HIROSHIMA CITY
- 13 FACULTY OF EDUCATION, Kochi Univ., Asakura, KOCHI
- 14 ZOOLOGICAL INSTITUTE, College of Science, Kyoto Univ., Sakyo-ku, KYOTO
- 15 BIOLOGICAL LABORATORY, Osaka Liberal Arts Univ., Ten-noji-ku, OSAKA
- 16 ZOOLOGICAL INSTITUTE, Hokkaido Univ., SAPPORO

AUSTRALIA

Australia

- 17 DEPARTMENT OF ZOOLOGY, New England Univ., ARMIDALE, N.S.W.

EUROPE

Belgium

- * REPTILAMPHIBIA (Felix Vandevælde), Remerstr., BAAL, Brabant

Czechoslovakia

- 18 INSTITUTE OF BIOLOGY, Czechoslovak Acad. of Sci., Na cvičišti 2, PRAHA 6

Denmark

- 19 INST. FOR ALM. ZOOL., Universitetsparken 3, COPENHAGEN Ø

* Biological Supply Houses, Zoological Collectors, etc.

France

- 20 LABORATOIRE D'HISTOLOGIE, Fac. de Méd., MONTPELLIER
- 21 LABORATOIRE DE BIOLOGIE ANIMALE, Fac. des Sci. de Bordeaux, 351 Cours de la Libération, TALENCE (Gironde)

Germany (East)

- 22 ZOOLOGISCHES INSTITUT, Universität Rostock, Stalinplatz, ROSTOCK

Germany (West)

- 23 INSTITUT FÜR EXPERIMENTELLE KREBSFORSCHUNG, Voss-Str. 3, HEIDELBERG
- 24 INSTITUT FÜR ENTWICKLUNGSPHYSIOLOGIE, Gyrhofstr. 17, KÖLN - Lindenthal
- 25 ZOOLOGISCHES INSTITUT der Universität, Kerpenerstr. 13, KÖLN - Lindenthal
- 26 ZOOLOGISCHES INSTITUT der Universität, Luisenstr. 14, MÜNCHEN 2
- 27 Prof. Dr. V. SCHWARTZ, Zoologisches Institut der Universität, Hölderlinstr. 12, TÜBINGEN
- 28 INSTITUT FÜR ANGEWANDTE ZOOLOGIE der Universität, Röntgenring 10, WÜRZBURG

Hungary

- 29 INSTITUTE OF ANATOMY, University Medical School, Dischka u 5, PÉCS

Italy

- 30 ISTITUTO DI GENETICA, Univ. di Milano, Via Celoria 10, MILANO
- 31* STAZIONE ZOOLOGICA, Villa Comunale, NAPOLI (101)
- 32 ISTITUTO DI ZOOLOGIA, Via Archirafi 18, PALERMO
- 33 ISTITUTO DI ANATOMIA COMPARATA, Via Archirafi 22, PALERMO
- 34 ISTITUTO DI BIOLOGIA E ZOOLOGIA GENERALE, Università di Siena, Piazza S. Agostino 4, SIENA

Netherlands

- 35 GENETISCH LABORATORIUM der Rijksuniversiteit, 5e Binnenvestgracht 8, LEIDEN

Poland

- 36 ZOOLOGICAL DEPARTMENT, Jagiellonian University, Św. Anny 6, KRAKOW

Switzerland

- 37 SCHWEIZERISCHES TROPENINSTITUT, Socinstr. 57, BASEL

Communications from the Hubrecht Laboratory

I The team work project

The *fourth international team work* was held from January 1 till July 31, 1960 under the guidance of the scientific staff of the Hubrecht Laboratory. Its topic was: "Experimental studies of basic mechanisms acting in successive phases of vertebrate morphogenesis". The team consisted of the following participants:

Dr. R. Azoubel, Recife, Brazil
 Mr. M. Corner, New York, U.S.A.
 Mr. V. Labordus, Utrecht, Holland
 Dr. M. I. Michael, Alexandria, Egypt
 Mr. K. Rzehak, Krakow, Poland
 Dr. G. Székely, Pécs, Hungary

Mr. Labordus and Dr. Michael could not take part at the beginning, while Mr. Corner joined the team in the early part of June. No joint publication is planned, but separate publications by the individual members may appear later. The fourth team work has been the last to be held in the old building, and it is hoped that a fifth can be organized in the new building in 1963 or 1964.

II The building project

It is hoped that the building activities can be started in the spring of 1961. The new building could then be ready by the end of 1962.

The plans for the development of a tissue culture research unit have been curtailed by the tragic and untimely death of Dr. H. Sobel (Jerusalem), who was to join the staff of the Laboratory in the course of 1960.

In the beginning of 1961 a biochemist will join the staff, and will start preparatory work for the future histo- and cytochemical research unit. It is hoped that the staff can be extended by a tissue culture specialist in the beginning of 1962, before moving into the new building.

III The Central Embryological Library and the Central Embryological Collection

For information regarding these two institutions the reader is referred to the eighth full issue, 1959, page 229—230.

IV Photographic Reproduction Service

The prices for this Service have been reduced as follows:
 Prices per page (both text and plates):

Positive microfilm (25 × 36 mm): H. f 0.15 (= ± \$ 0.04)

Enlarged prints

9 × 12 cm (box camera size)	: H. f 0.15 (= ± \$ 0.04)
13 × 18 cm (average page)	: H. f 0.20 (= ± \$ 0.05)
18 × 24 cm (large page)	: H. f 0.25 (= ± \$ 0.07)

Communications of the „International Institute of Embryology” (Section of Developmental Biology of the I.U.B.S.)

The Section of Developmental Biology (formerly the Embryological Section) of the I.U.B.S. held its fourth International Symposium from September 15th till September 20th, 1960, in the Villa "Kursaal" at Pallanza, Northern Italy. Besides the sponsorship of the I.U.B.S., the Symposium received the generous support of various Italian scientific and educational organisations.

Its topic was "Advances since 1945 in our knowledge of germ cells and earliest stages of development", which was subdivided into two main subtopics, viz. "Formation, ultrastructure and physiology of oocytes, as seen in the light of their morphogenetic significance" and "Progressive maturation of the organisation pattern in fertilized and cleaving eggs". The subtopics were treated from causal-morphological, genetical, physiological and biochemical viewpoints, while in the second subtopic the various types of development found in the animal kingdom received special attention. Except for two special lectures, one on sperm and one on fertilization, the main attention was focused on the egg cell and its development.

The Symposium aroused great interest, with the result that about two hundred embryologists from all parts of the world gathered at Pallanza. This great attendance was certainly also due to the coordination of the dates of the Symposium with those of the Congress of Cell Biology in Paris.

This was the reason why the General Assembly of the I.I.E., which was convened during the Symposium, viz. on September 18th, suggested that the next Symposium be held again in coordination with the cell biologist meeting, viz. in the North East of the United States in September 1964.

At the General Assembly the President spoke in commemoration of the fellows R. G. Harrison and S. R. Detwiler, whom the I.I.E. lost by death.

Ten new fellows and about 120 new members have been elected. The college of members has thus acquired a much more representative character than was previously the case.

From the General Assembly it was suggested that the institution of fellowship as such should be abolished, and a general membership only should be maintained. A special committee was appointed to study this question in detail, and to supply the present Board with all the arguments for and against, in order that this matter may be adequately discussed at the next General Assembly.

A lively discussion developed as to the most efficient form of organisation of the Symposia held by the I.I.E., and with regard to the question whether the use should be recommended of only one congress language for the scientific activities of the I.I.E.

Three members of the Board, the fellows Dalcq (President), Weiss (Vice president) and Lehmann (Secretary-treasurer) were not eligible for re-election.

The fellows Monroy, Pasteels and Burns were therefore elected as new members. For the next term the Board is composed as follows:

Prof. Et. Wolff (Paris)	President
Prof. S. Ranzi (Milano)	Vice president
Prof. S. Hörstadius (Uppsala)	" "
Dr. H. B. Fell (Cambridge)	" "
Prof. J. Pasteels (Brussels)	Member
Dr. R. K. Burns (Baltimore, Md.)	"
Prof. A. Monroy (Palermo)	Secretary-treasurer
Prof. P. D. Nieuwkoop (Utrecht)	Adj. Secretary-treasurer

The Adjunct Secretary-treasurer, P. D. NIEUWKOOP

Lists of Fellows and Members

The following lists were drawn up on December 1st, 1960. For full addresses see list of addresses in eighth full issue, 1959, of this journal and in the present supplement.

Fellows (alphabetical order, with years of election):

M. Abercrombie, London, Eng., '56	K. Dan, Tokyo, '60
H. B. Adelman, Ithaca, N.Y., '48	U. D'Ancona, Padova, '60
P. A. Ancel*, prior to '33	N. I. Dragomirov, Moscow, '48
B. L. Astaurov, Moscow, '56	R. M. Eakin, Berkeley, Calif., '48
M. Avel, Talence, '48	J. D. Ebert, Baltimore, Md., '60
B. I. Balinsky, Johannesburg, '48	G. Fankhauser, Princeton, N.J., '48
F. Baltzer*, Bern, '48	E. Fauré Fremiet*, Paris, '33
L. G. Barth, New York, '48	Miss H. B. Fell, Cambridge, Eng., '36
Sir G. R. de Beer, London, Eng., '38	M. Fischberg, Oxford, Eng., '60
H. Bluntschli*, Bern, prior to '33	T. Thomson Flynn*, London, Eng., '38
J. D. Boyd, Cambridge, Eng., '57	
J. Brachet, Brussels, '48	L. Gallien, Paris '56
F. W. R. Brambell, Bangor, '56	P. Gérard*, Brussels, '33
P. L. Brien, Brussels, '48	A. Giroud, Paris, '48
R. W. Briggs, Bloomington, Ind., '60	H. Grüneberg, London, Eng., '56
A. J. P. v. d. Broek*, Utrecht, '36	E. Hadorn, Zürich, '48
H. V. Brondsted, Copenhagen, '48	V. Hamburger, St. Louis, Mo., '48
R.K. Burns, Baltimore, Md., '52	W. J. Hamilton, London, Eng., '48
E. G. Butler, Princeton, N. J., '56	Mrs. E. B. Harvey*, Princeton, N.J., '48
E. van Campenhout, Louvain, '48	
Chuang Hsiao-Hui, Shanghai, '48	Ch. H. Heuser*, Augusta, Ga., '48
G. W. Corner*, New York, '52	L. Hoadley, Cambridge, Mass., '48
D. P. Costello, Chapel Hill, N.C., '48	J. K. F. Holtfreter, Rochester, N.Y., '36
G. Cotronei*, Roma, '48	
A. M. Dalcq, Brussels, '33	S. Hörstadius, Uppsala, '48

* Emeritus

- R. R. Humphrey, Bloomington, Ind., '49
 A. Kühn*, Tübingen, '57
 W. Landauer, Storrs, Conn., '57
 F. E. Lehmann, Bern, '48
 G. L. Levi*, Torino, prior to '33
 Mrs. R. Levi-Montalcini, St. Louis, Mo., '60
 W. H. Lewis*, Philadelphia, Pa., prior to '33
 P. E. Lindahl, Uppsala, '48
 G. V. Lopashov, Moscow, '48
 O. Mangold*, Heiligenberg, prior to '33
 A. Monroy, Palermo, '57
 P. D. F. Murray, Armidale, '48
 J. Needham, Cambridge, Eng., '48
 J. S. Nicholas, New Haven, Conn., '48
 P. D. Nieuwkoop, Utrecht, '57
 Y. K. Okada*, Tokyo, '52
 S. Pai, Shanghai, '48
 P. Pasquini, Roma, '57
 J. J. Pasteels, Brussels, '38
 L. V. Polezhaev, Moscow, '48
 S. Ranzi, Milano, '48
 Chr. P. Raven, Utrecht, '41
 G. Reverberi, Palermo, '48
 J. A. M. Runnström, Stockholm, '48
 A. M. Schechtman, Los Angeles, Calif., '48
 F. Seidel, Marburg/Lahn, '60
 N. T. Spratt, Minneapolis, Minn., '60
 D. Starck, Frankfurt/Main, '52
 A. Stefanelli, Roma, '52
 L. S. Stone, New Haven, Conn., '48
 S. I. Toivonen, Helsinki, '48
 G. Töndury, Zürich, '48
 T. C. Tung, Shanghai, '48
 V. C. Twitty, Stanford, Calif., '48
 A. Tyler, Pasadena, Calif., '48
 L. von Ubisch*, Paradis, '48
 C. H. Waddington, Edinburgh, '48
 A. Weber*, Genève, '33
 P. A. Weiss, New York, '48
 V. B. Wigglesworth, Cambridge, Eng., '57
 B. H. Willier*, Baltimore, Md., '48
 E. Witschi*, Iowa City, Iowa, '48
 M. W. Woerdeman, Amsterdam, prior to '33
 Et. C. Wolff, Paris, '48
 T. Yamada, Nagoya, '57
 C. L. Yntema, Syracuse, N.Y., '48
 E. Zwilling, Waltham, Mass., '60

Members (alphabetical order, with years of election):

- I. P. S. Agrell, Lund, '60
 R. D. Allen, Princeton, N.J., '57
 R. M. Amprino, Bari, '60
 G. Andres, Mainz, '57
 J. Ariëns Kappers, Groningen, '60
 C. R. Austin, London, Eng., '57
 C. Barigozzi, Milano, '60
 H. Bautzmann, Hamburg, '60
 R. A. Beatty, Edinburgh, '56
 W. Beermann, Tübingen, '60
 Mrs. M. R. Bellairs, London, Eng., '60
 M. Benazzi, Pisa, '56
 J. A. A. Benoit, Paris, '60
 W. E. Berg, Berkeley, Calif., '57
 H. Bergquist, Göteborg, '57
 Miss J. H. Bijtel, Groningen, '56
 R. F. Blount, Galveston, Texas, '60
 D. Bodenstein, Charlottesville, Va., '56
 E. J. Boell, New Haven, Conn., '57
 J. T. Bonner, Princeton, N.J., '60
 E. Borghese, Frascati (Roma), '56
 B. G. Böving, Baltimore, Md., '57
 C. Burdon-Jones, Menai Bridge, '60
 R. Cambar, Talence, '57
 E. W. Caspari, Rochester, N.Y., '60
 G. ten Cate, Utrecht, '56
 C. Y. Chang, Peking, '57
 H. B. Chase, Providence, R.I., '60
 P. S. Chen, Zürich, '60
 Mrs. M. Cigada, Milano, '57
 J. Clavert, Strasbourg, '57
 Mrs. R. M. Clayton, Edinburgh, '60
 A. C. Clement, Atlanta, Ga., '57
 G. Colombo, Padova, '60

- A. L. Colwin, Flushing, N.Y., '56
 Mrs. L. H. Colwin, Flushing, N.Y., '60
 P. Sears Crowell, Bloomington, Ind., '60
 H. F. C. Damas, Liège, '57
 Mrs. J. C. Dan, Tokyo, '57
 J. Dankmeijer, Leiden, '60
 Mrs. T. A. Dettlaff, Moscow, '56
 Miss E. M. Deuchar, London, Eng., '57
 Ch. Devillers, Paris, '57
 A. Dollander, Nancy, '60
 W. J. van Doorenmaalen, A'dam, '60
 M. V. Edds Jr., Providence, R.I., '60
 H. Engländer, Köln-Lindenthal, '60
 J. C. Fautrez, Gent, '57
 Mrs. A. A. Ficq, Bruxelles-Auder., '60
 G. Filogamo, Torino, '60
 L. B. Flexner, Philadelphia, Pa., '56
 R. A. Flickinger, Iowa City, Iowa, '60
 Ch. L. Foote, Carbondale, Ill., '57
 T. Fujii, Tokyo, '60
 P. J. Gaillard, Leiden, '60
 J. Gallera, Genève, '57
 P. W. Gilbert, Ithaca, N.Y., '60
 T. W. Glenister, London, Eng., '60
 J. R. Gregg, Durham, N.C., '57
 C. Grobstein, Stanford, Calif., '56
 Z. Grodziński, Krakow, '60
 T. Gustafson, Stockholm, '56
 A. Haget, Talence, '60
 E. K. Hall, Louisville, Ky., '60
 T. Hama, Yokohama, '60
 H. L. Hamilton, Ames, Iowa, '56
 J. Hämmerling, Wilhelmshafen, '60
 W. S. Hammond, Syracuse, N.Y., '60
 M. Hasěk, Prague, '57
 H. Hayek, Vienna, '60
 H. Herrmann, Storrs, Conn., '60
 Y. Hiramoto, Misaki, '60
 H. Holter, Copenhagen, '57
 H. Holtzer, Philadelphia, Pa., '60
 D. Hooker*, New Haven, Conn., '56
 J. M. T. Hultin, Stockholm, '56
 Miss T. Humphrey, Pittsburgh, Pa., '56
 M. Ichikawa, Kyoto, '60
 J. Ishida, Tokyo, '60
 J. Jansen, Oslo, '60
 A. D. Jost, Paris, '56
 A. J. B. Källén, Lund, '60
 I. Kawakami, Fukuoka, '57
 N. E. Kemp, Ann Arbor, Mich., '57
 Th. J. King, Philadelphia, Pa., '60
 J. J. Kollros, Iowa City, Iowa, '56
 G. Krause, Würzburg, '56
 Miss T. K. Kuusi, Helsinki, '56
 R. A. Lallier, Paris, '60
 J. Langman, Montreal, '56
 S. Leghissa, Bologna, '60
 H. E. Lehman, Chapel Hill, N.C., '57
 Th. Lender, Orsay, '60
 V. Leone, Milano, '57
 S. Lovtrup, Göteborg, '60
 W. Luther, Darmstadt, '60
 H. Lutz, Clermont-Ferrand, '57
 T. Mann, Cambridge, Eng., '60
 C. L. Markert, Baltimore, Md., '57
 P. Martinovitch, Belgrado, '60
 C. B. Metz, Tallahassee, Fla., '56
 Y. Mikami, Tsu, '60
 A. Minganti, Palermo, '56
 Miss B. Mintz, Philadelphia, Pa., '57
 Miss F. Moog, St. Louis, Mo., '56
 S. Mookerjee, Calcutta, '60
 J. A. Moore, New York, '57
 A. Moscona, Chicago, Ill., '57
 H. W. Mossman, Madison, Wis., '56
 I. Motomura, Sendai, '57
 J. Mulnard, Brussels, '57
 M. R. Murray, New York, '60
 G. W. Nace, Ann Arbor, Mich., '60
 O. Nakamura, Ikeda, '57
 E. Nakano, Nagoya, '57
 D. R. Newth, London, Eng., '57
 M. C. Niu, New York, '56
 H. Oka, Tokyo, '60
 T. S. Okada, Kyoto, '60
 Miss K. Okazaki, Tokyo, '60
 O. M. Olivo, Bologna, '57
 Miss J. M. Oppenheimer, Bryn Mawr, Pa., '56
 F. Orts Llorca, Madrid, '56
 Mrs J. H. Overton, Chicago, Ill., '60
 B. M. Patten*, Ann Arbor, Mich., '56
 H. P. Perlmann, Stockholm, '60

- T. Perri, Perugia, '56
 J. Piatt, Philadelphia, Pa., '60
 D. F. Poulson, New Haven, Conn., '60
 Miss D. Price, Chicago, Ill., '60
 L. Raunich, Ferrara, '56
 Miss M. E. Rawles, Baltimore, Md., '56
 A. Raynaud, Sannois, '60
 R. W. Reyer, Morgantown, W. Va., '56
 S. M. Rose, Champaign, Ill., '56
 J. Rostand, Ville d'Avray, '60
 Lord Rothschild, Cambridge, Eng., '60
 Miss D. Rudnick, New Haven, Conn., '56
 R. Rugh, New York, '56
 M. N. Runner, Washington, D.C., '60
 M. Sala, S.J., Padova, '60
 T. Sato, Nagoya, '57
 J. W. Saunders, Milwaukee, Wis., '56
 L. O. Saxén, Helsinki, '60
 G. A. Schmidt, Moscow, '60
 O. E. Schotté, Amherst, Mass., '56
 B. Schreiber, Parma, '56
 S. N. Sedra, Alexandria, '60
 S. J. Segal, New York, '57
 G. G. Selman, Edinburgh, '60
 K. Sembrat, Wrocław, '60
 Ph. Sengel, Paris, '60
 E. C. Sensenig, Birmingham, Ala., '57
 P. Sentein, Montpellier, '60
 J. R. Shaver, East Lansing, Mich., '60
 S. C. Shen, New York, '60
 K. I. Shirakami, Kôfu, '60
 J. L. Sirlin, Edinburgh, '60
 N. Skreb, Zagreb, '60
 F. Sládeček, Prague, '60
 A. Spirito, Perugia, '56
 Mrs. F. Stéphan-Dubois, Strasbourg, '60
 F. Strauss, Bern, '60
 H. Sugino, Osaka, '57
 M. Sugiyama, Toba, '57
 K. Takata, Nagoya, '60
 H. Takaya, Kobe, '57
 A. K. Tarkowski, Warsaw, '60
 A. C. Taylor, New York, '57
 C. S. Thornton, Gambier, Ohio, '60
 H. Tiedemann, Heiligenberg, '60
 C. A. du Toit, Stellenbosch, '60
 H. A. L. Trampusch, A'dam, '56
 J. P. Trinkaus, New Haven, Conn., '60
 H. Tuchman-Duplessis, Paris, '56
 E. Urbani, Camerino, '56
 L. C. Vakaet, Gent, '60
 G. Vandebroek, Louvain, '57
 E. Vannini, Bologna, '56
 W. S. Vincent, Syracuse, N.Y., '60
 J. H. Vivien, Strasbourg, '60
 Mrs. S. Gluecksohn Waelsch, New York, '60
 J. Warkany, Cincinnati, Ohio, '60
 A. J. Waterman, Williamstown, Mass., '56
 R. L. Watterson, Evanston, Ill., '56
 R. Weber, Bern, '60
 L. J. Wells, Minneapolis, Minn., '60
 A. H. Whiteley, Seattle, Wash., '57
 C. E. Wilde, Philadelphia, Pa., '57
 C. M. Williams, Cambridge, Mass., '60
 W. A. Wimsatt, Ithaca, N.Y., '56
 C. von Woellwarth, Heiligenberg, '56
 A. Wolsky, New York, '60
 K. Yamamoto, Hakodate, '60
 T. Yamamoto, Nagoya, '60
 Miss J. J. P. Zaaijer, Leiden, '60
 E. Zeuthen, Copenhagen, '57
 A. Zimmerman, Houston, Texas, '56

On the next pages the names of the fellows and members are given also in a geographical order, with the aim of showing to what extent a representative character of the I.I.E. has been achieved by the election of new members at the latest General Assembly.

Fellows and Members (geographical order):

A F R I C A

Egypt

S. N. Sedra, Alexandria (Member)

South-Africa

(Fellow)

B. I. Balinsky, Johannesburg

C. A. du Toit, Stellenbosch (M.)

A M E R I C A

Canada

J. Langman, Montreal (M.)

P. Sears Crowell, Bloomington (M.)

R. R. Humphrey, Bloomington (F.)

United States**Alabama**

E. C. Sensenig, Birmingham (M.)

California

W. E. Berg, Berkeley (M.)

R. M. Eakin, Berkeley (F.)

C. Grobstein, Stanford (M.)

A. M. Schechtman, Los Angeles (F.)

V. C. Twitty, Stanford (F.)

A. Tyler, Pasadena (F.)

Connecticut

E. J. Boell, New Haven (M.)

H. Herrmann, Storrs (M.)

D. Hooker*, New Haven (M.)

W. Landauer, Storrs (F.)

J. S. Nicholas, New Haven (F.)

D. F. Poulson, New Haven (M.)

Miss D. Rudnick, New Haven (M.)

L. S. Stone, New Haven (F.)

J. P. Trinkaus, New Haven (M.)

District of Columbia

M. N. Runner, Washington (M.)

Florida

C. B. Metz, Tallahassee, (M.)

Georgia

A. C. Clement, Atlanta (M.)

Ch. H. Heuser*, Augusta (F.)

Illinois

Ch. L. Foote, Carbondale (M.)

A. Moscona, Chicago (M.)

Mrs. J. H. Overton, Chicago (M.)

Miss D. Price, Chicago (M.)

S. M. Rose, Champaign (M.)

R. L. Watterson, Evanston (M.)

Indiana

R. W. Briggs, Bloomington (F.)

Iowa

R. A. Flickinger, Iowa City (M.)

H. L. Hamilton, Ames (M.)

J. J. Kollros, Iowa City (M.)

E. Witschi*, Iowa City (F.)

Kentucky

E. K. Hall, Louisville (M.)

Maryland

B. G. Böving, Baltimore (M.)

R. K. Burns, Baltimore (F.)

J. D. Ebert, Baltimore (F.)

C. L. Markert, Baltimore (M.)

Miss M. E. Rawles, Baltimore (M.)

B. H. Willier*, Baltimore (F.)

Massachusetts

O. E. Schotté, Amherst (M.)

L. Hoadley, Cambridge (F.)

A. J. Waterman, Williamstown (M.)

C. M. Williams, Cambridge (M.)

E. Zwilling, Waltham (F.)

Michigan

N. E. Kemp, Ann Arbor (M.)

G. W. Nace, Ann Arbor (M.)

B. M. Patten*, Ann Arbor (M.)

J. R. Shaver, East Lansing (M.)

Minnesota

N. T. Spratt, Minneapolis (F.)

L. J. Wells, Minneapolis (M.)

Missouri

V. Hamburger, St. Louis (F.)

Mrs. R. Levi-Montalcini (F.)

Miss F. Moog, St. Louis (M.)

New Jersey

R. D. Allen, Princeton (M.)

J. T. Bonner, Princeton (M.)

E. G. Butler, Princeton (F.)

G. Fankhauser, Princeton (F.)

Mrs. E. B. Harvey*, Princeton (F.)

New York

H. B. Adelman, Ithaca (F.)
 L. G. Barth, New York (F.)
 E. W. Caspari, Rochester (M.)
 A. L. Colwin, Flushing (M.)
 Mrs. L. H. Colwin, Flushing (M.)
 G. W. Corner*, New York (F.)
 P. W. Gilbert, Ithaca (M.)
 W. S. Hammond, Syracuse (M.)
 J. K. F. Holtfreter, Rochester (F.)
 J. A. Moore, New York (M.)
 M. R. Murray, New York (M.)
 M. C. Niu, New York (M.)
 R. Rugh, New York (M.)
 S. J. Segal, New York (M.)
 S. C. Shen, New York (M.)
 A. C. Taylor, New York (M.)
 W. S. Vincent, Syracuse (M.)
 Mrs. S. Gluecksohn Waelsch,
 New York (M.)

P. A. Weiss, New York (F.)
 W. A. Wimsatt, Ithaca (M.)
 A. Wolsky, New York (M.)
 C. L. Yntema, Syracuse (F.)

North Carolina

D. P. Costello, Chapel Hill (F.)
 J. R. Gregg, Durham (M.)
 H. E. Lehman, Chapel Hill (M.)

Ohio

C. S. Thornton, Gambier (M.)
 J. Warkany, Cincinnati (M.)

China

C. Y. Chang, Peking (M.)
 Chuang Hsiao-Hui, Shanghai (F.)
 S. Pai, Shanghai (F.)
 T. C. Tung, Shanghai (F.)

India

S. Mookerjee, Calcutta (M.)

Japan

Mrs. J. C. Dan, Tokyo (M.)
 K. Dan, Tokyo (F.)
 T. Fujii, Tokyo (M.)
 T. Hama, Yokohama (M.)
 Y. Hiramoto, Misaki (M.)
 M. Ichikawa, Kyoto (M.)
 J. Ishida, Tokyo (M.)
 I. Kawakami, Fukuoka (M.)

Pennsylvania

L. B. Flexner, Philadelphia (M.)
 H. Holtzer, Philadelphia (M.)
 Miss T. Humphrey, Pittsburgh (M.)
 Th. J. King, Philadelphia (M.)
 W. H. Lewis*, Philadelphia (F.)
 Miss B. Mintz, Philadelphia (M.)
 Miss J. M. Oppenheimer,
 Bryn Mawr (M.)
 J. Piatt, Philadelphia (M.)
 C. E. Wilde, Philadelphia (M.)

Rhode Island

H. B. Chase, Providence (M.)
 M. V. Edds Jr., Providence (M.)

Texas

R. F. Blount, Galveston (M.)
 A. Zimmerman, Houston (M.)

Virginia

D. Bodenstein, Charlottesville (M.)

Washington

A. H. Whiteley, Seattle (M.)

West Virginia

R. W. Reyer, Morgantown (M.)

Wisconsin

H. W. Mossman, Madison (M.)
 J. W. Saunders, Milwaukee (M.)

S. A m e r i c a

no members

A S I A

Y. Mikami, Tsu (M.)
 I. Motomura, Sendai (M.)
 O. Nakamura, Ikeda (M.)
 E. Nakano, Nagoya (M.)
 H. Oka, Tokyo (M.)
 T. S. Okada, Kyoto (M.)
 Y. K. Okada*, Tokyo (F.)
 Miss K. Okazaki, Tokyo (M.)
 T. Sato, Nagoya (M.)
 K. I. Shirakami, Kôfu (M.)
 H. Sugino, Osaka (M.)
 M. Sugiyama, Toba (M.)
 K. Takata, Nagoya (M.)
 H. Takaya, Kobe (M.)
 T. Yamada, Nagoya (F.)
 K. Yamamoto, Hakodate (M.)
 T. Yamamoto, Nagoya (M.)

AUSTRALIA

Australia

P. D. F. Murray, Armidale (F.)

EUROPE

Austria

H. Hayek, Vienna (M.)

Belgium

J. Brachet, Brussels (F.)

P. L. Brien, Brussels (F.)

E. van Campenhout, Louvain (F.)

A. M. Dalcq, Brussels (F.)

H. F. C. Damas, Liège (M.)

J. C. Fautrez, Gent (M.)

Mrs. A. A. Ficq, Bruxelles - Auder.
(M.)

P. Gérard*, Brussels (F.)

J. Mulnard, Brussels (M.)

J. J. Pasteels, Brussels (F.)

L. C. Vakaet, Gent (M.)

G. Vandebroek, Louvain (M.)

Czechoslovakia

M. Hasěk, Prague (M.)

F. Sládecek, Prague (M.)

Denmark

H. V. Brøndsted, Copenhagen (F.)

H. Holter, Copenhagen (M.)

E. Zeuthen, Copenhagen (M.)

Finland

Miss T. K. Kuusi, Helsinki (M.)

L. O. Saxén, Helsinki (M.)

S. I. Toivonen, Helsinki (F.)

France

P. A. Ancel*, Paris (F.)

M. Avel, Talence (F.)

J. A. A. Benoit, Paris (M.)

R. Cambar, Talence (M.)

J. Clavert, Strasbourg (M.)

Ch. Devillers, Paris (M.)

A. Dollander, Nancy (M.)

E. Fauré Fremiet*, Paris (F.)

L. Gallien, Paris (F.)

A. Giroud, Paris (F.)

A. Haget, Talence (M.)

A. D. Jost, Paris (M.)

R. A. Lallier, Paris (M.)

Th. Lender, Orsay (M.)

H. Lutz, Clermont-Ferrand (M.)

A. Raynaud, Sannois (M.)

J. Rostand, Ville d'Avray (M.)

Ph. Sengel, Paris (M.)

P. Sentein, Montpellier (M.)

Mrs. F. Stéphan-Dubois, Strasbourg
(M.)

H. Tuchman-Duplessis, Paris (M.)

J. H. Vivien, Strasbourg (M.)

Et. C. Wolff, Paris (F.)

Germany

G. Andres, Mainz (M.)

H. Bautzmann, Hamburg (M.)

W. Beermann, Tübingen (M.)

H. Engländer, Köln-Lindenthal
(M.)

J. Hämmerling, Wilhelmshafen (M.)

G. Krause, Würzburg (M.)

A. Kühn*, Tübingen (F.)

W. Luther, Darmstadt (M.)

O. Mangold*, Heiligenberg (F.)

F. Seidel, Marburg/Lahn (F.)

D. Starck, Frankfurt/Main (F.)

H. Tiedemann, Heiligenberg (M.)

C. von Woellwarth, Heiligenberg
(M.)

Italy

R. M. Amprino, Bari (M.)

C. Barigozzi, Milano (M.)

M. Benazzi, Pisa (M.)

E. Borghese, Frascati (Roma) (M.)

Mrs. M. Cigada, Milano (M.)

G. Colombo, Padova (M.)

G. Cotronei*, Roma (F.)

U. D'Ancona, Padova (F.)

G. Filogamo, Torino (M.)

S. Leghissa, Bologna (M.)

V. Leone, Milano (M.)

G. L. Levi*, Torino (F.)

A. Minganti, Palermo (M.)

A. Monroy, Palermo (F.)

O. M. Olivo, Bologna (M.)

P. Pasquini, Roma (F.)

T. Perri, Perugia (M.)

S. Ranzi, Milano (F.)

L. Raunich, Ferrara (M.)
 G. Reverberi, Palermo (F.)
 M. Sala, S.J., Padova (M.)
 B. Schreiber, Parma (M.)
 A. Spirito, Perugia (M.)
 A. Stefanelli, Roma (F.)
 E. Urbani, Camerino (M.)
 E. Vannini, Bologna (M.)

Netherlands

J. Ariëns Kappers, Groningen (M.)
 Miss J. H. Bijtel, Groningen (M.)
 A. J. P. van den Broek*, Utrecht (F.)

G. ten Cate, Utrecht (M.)
 J. Dankmeijer, Leiden (M.)
 W. J. van Doorenmaalen, A'dam (M.)

P. J. Gaillard, Leiden (M.)
 P. D. Nieuwkoop, Utrecht (F.)
 Chr. P. Raven, Utrecht (F.)
 H. A. L. Trampusch, A'dam (M.)
 M. W. Woerdeman, A'dam (F.)
 Miss J. J. P. Zaaijer, Leiden (M.)

Norway

J. Jansen, Oslo (M.)
 L. von Ubisch*, Paradis (F.)

Poland

Z. Grodziński, Krakow (M.)
 K. Sembrat, Wroclaw (M.)
 A. K. Tarkowski, Warsaw (M.)

Spain

F. Orts Llorca, Madrid (M.)

Sweden

L. P. S. Agrell, Lund (M.)
 H. Bergquist, Göteborg (M.)
 T. Gustafson, Stockholm (M.)
 S. Hörstadius, Uppsala (F.)
 J. M. T. Hultin, Stockholm (M.)
 A. J. B. Källén, Lund (M.)
 P. E. Lindahl, Uppsala (F.)
 S. Løvtrup, Göteborg (M.)
 H. P. Perlmann, Stockholm (M.)
 J. A. M. Runnström*, Stockholm (F.)

Switzerland

F. Baltzer*, Bern (F.)
 H. Bluntschli*, Bern (F.)
 P. S. Chen, Zürich (M.)

J. Gallera, Genève (M.)
 E. Hadorn, Zürich (F.)
 F. E. Lehmann, Bern (F.)
 F. Strauss, Bern (M.)
 G. Töndury, Zürich (F.)
 A. Weber*, Genève (F.)
 R. Weber, Bern (M.)

United Kingdom

England

M. Abercrombie, London (F.)
 C. R. Austin, London (M.)
 Sir G. R. de Beer, London (F.)
 Mrs. M. R. Bellairs, London (M.)
 J. D. Boyd, Cambridge (F.)
 Miss E. M. Deuchar, London (M.)
 Miss H. B. Fell, Cambridge (F.)
 M. Fischberg, Oxford (F.)
 T. Thomson Flynn*, London (F.)
 T. W. Glenister, London (M.)
 H. Grüneberg, London (F.)
 W. J. Hamilton, London (F.)
 T. Mann, Cambridge (M.)
 J. Needham, Cambridge (F.)
 D. R. Newth, London (M.)
 Lord Rothschild, Cambridge (M.)
 V. B. Wigglesworth, Cambridge (F.)

Scotland

R. A. Beatty, Edinburgh (M.)
 Mrs. R. M. Clayton, Edinburgh (M.)
 G. G. Selman, Edinburgh (M.)
 J. L. Sirlin, Edinburgh (M.)
 C. H. Waddington, Edinburgh (F.)

Wales

F. W. R. Brambell, Bangor (F.)
 C. Burdon-Jones, Menai Bridge (M.)

U.S.S.R.

B. L. Astaurov, Moscow (F.)
 Mrs. T. A. Dettlaff, Moscow (M.)
 N. I. Dragomirov, Moscow (F.)
 G. V. Lopashov, Moscow (F.)
 L. V. Polezhaev, Moscow (F.)
 G. A. Schmidt, Moscow (M.)

Yugoslavia

P. Martinovitch, Belgrado (M.)
 N. Skreb, Zagreb (M.)

Announcements of recently published books on development and related subjects

Group A (books for instruction):

- BALINSKY, B. I., 1960 — "An introduction to embryology"
 HARRISON, R. G., 1959 — "A textbook of human embryology"
 HOUSE, E. L. and B. PANSKY, 1960 — "A functional approach to neuro-anatomy"
 MARTIN, Ph. C. and E. L. VINCENT, 1960 — "Human development"
 MERCHANT, D. J., R. H. KAHN and W. H. MURPHY, Jr., 1960 — "Handbook of cell and organ culture"
 NEWBY, W. W., 1960 — "A guide to the study of development"
 PERMAR, D., 1959 — "A manual of oral embryology and microscopic anatomy" (2nd edition)

Group B (books for research, etc.):

- AUSTIN, C. R. (editor), 1960 — "Sex differentiation and development"
 BRACHET, J., 1960 — "The biochemistry of development"
 GAUTHERET, R. J., 1960 — "La culture des tissus végétaux, techniques et réalisations"
 GREULICH, W. W. and S. I. PYLE, 1959 — "Radiographic atlas of skeletal development of the hand and wrist" (2nd edition)
 HEUYER, G., M. FELD and J. GRUNER (editors), 1959 — "Malformations congénitales du cerveau"
 HOMMA, H., 1958 — "Das Formproblem in der Biologie"
 KALISS, N. (editor), 1960 — "Normal and abnormal differentiation and development"
 KOURILSKY, R., R. M. MAY and G. VOISIN (organizers of the colloquium), 1958 — "La biologie des homogreffes"
 KRABBE, K. H., 1959 — "Studies on the brain development of the Kiwi, Apteryx Mantelli"
 LANMAN, J. T. (editor), 1959 and 1960 — "Physiology of prematurity" (Transactions of the third and fourth conference)
 LLOYD, Ch. W. (editor), 1959 — "Recent progress in the endocrinology of reproduction"
 NICKERSON, W. J. (editor), 1959 — "Biochemistry of morphogenesis"
 PREVEDI, G. and M. MARCATO, 1955 — "Microradiografia ossea, sviluppo e accrescimento dello scheletro umano; cranio e colonna vertebrale"

- ROMANOFF, A. L., 1960 — "The avian embryo, structural and functional development"
- ROSTAND, J., 1958 — "Anomalies des Amphibiens anoures"
- SINNOTT, E. W., 1960 — "Plant morphogenesis"
- STRASSEN, O. zur, 1959 — "Neue Beiträge zur Entwicklungsmechanik der Nematoden"
- VILLEE, C. A. (editor), 1959 — "Gestation"
- VORONTSOVA, M. A. and L. D. LIOSNER, 1960 — "Asexual propagation and regeneration"
- WADDINGTON, C. H. (editor), 1959 — "Biological organisation, cellular and sub-cellular"
- WALKER, J. and A. C. TURNBULL (editors), 1959 — "Oxygen supply to the human fetus"
- WIGGLESWORTH, V. B., 1959 — "The control of growth and form, a study of the epidermal cell in an insect"
- WOITKEWITSCH, A. A., 1959 — "Natürliche Mehrfachbildungen an Froschextremitäten"
- WOLSTENHOLME, G. E. W. and C. M. O'CONNOR (editors), 1960 — "Congenital malformations"

"AN INTRODUCTION TO EMBRYOLOGY"

1960

by B. I. Balinsky
562 pp., 291 figs.

W. B. Saunders Company
Philadelphia, London
Price: \$ 7.75

The author of this book is one of the first writers who have aimed at integrating descriptive and experimental embryology into one continuous text. He has admirably succeeded in giving the student a real insight into embryology as a continuously developing science.

A special feature distinguishing the book from other students' textbooks is the treatment of such subjects as postembryonic development, regeneration, metamorphosis, asexual reproduction ("blastogenesis"), and the role of genes in development. Differentiation and growth and their correlations are treated in 4 separate chapters. Further chapters of special interest are that devoted to embryonic adaptations, and that dealing with morphogenetic processes in epithelia and mesenchyme, which precedes the treatment of organogenesis according to organ systems.

The book is profusely illustrated. Oversimplified diagrams have been avoided, and many figures are included from recent publications, which again bring the student into contact with embryology as a living science. The student's way to the original literature is facilitated by numerous references in the text, which correspond with an extensive bibliography. The book is concluded by an alphabetical index. Typographically the book has received the greatest care.

"A TEXTBOOK OF HUMAN EMBRYOLOGY"

1959

by R. G. Harrison
244 pp., 144 figs.

Blackwell Scientific
Publications Ltd.
Oxford
Price: 45 s.

The present book was written primarily for the use of medical students. It presents human embryology as a science which in turn can assist the understanding of adult human anatomy. Therefore prenatal and postnatal development are presented as an integrated whole.

The book is shorter than most textbooks on this subject, because the morphological aspects of human development have been condensed rather a lot. In this respect the book is more like an outline. On the other hand much emphasis has been placed on functional, clinical and pathological aspects.

The treatment of development as such is preceded by well-illustrated chapters on the male and female reproductive systems, and on the pituitary and adrenal glands and their function in reproduction. A short chapter on regeneration concludes the book.

Much of the illustrative material consists of simple line-drawings, but these are supplemented by carefully selected photomicrographs. Selected references at the end of each chapter point the way to important original literature.

There is a very extensive subject index, and an author index. The book is well-printed and well-bound.

"A FUNCTIONAL APPROACH TO NEUROANATOMY"

1960

by E. L. House and B. Pansky
494 pp., 348 figs.

McGraw-Hill Book Company, Inc.
New York, Toronto, London
Price: 97 s.

This book was written primarily for the medical student. Without giving an extensive review one may mention that the book contains a chapter of 26 pages on the development of the human nervous system. This chapter is characterised by good diagrams and semi-diagrammatical illustrations, clearly visualising and summarising the principal features of the complicated process.

"HUMAN DEVELOPMENT"

1960

by Ph. C. Martin and E. L. Vincent
541 pp., 205 figs.

The Ronald Press Company
New York
Price: \$ 6.50

This is a text book written for the use of first-year students. It forms an introduction to human biology, taken in its widest sense. It gives the basic anatomical and physiological facts, supplemented by embryological, psychological and anthropological material.

The general scope of the book implies that those elements of human embryology presented are usually in a very schematic form, and are so widely scattered that they do not provide a coherent picture of human development. This, of course, has not been the purpose of the

authors, but this being as it is, it is to be regretted that the book has been given its present title. For, even if the word "development" in the title is taken to indicate also the physical, emotional, social, intellectual and spiritual changes occurring throughout the life span, one would have expected at least also a coherent account of man's phylogenetic development, an aspect which is lacking almost entirely.

"HANDBOOK OF CELL AND ORGAN CULTURE"

1960

by D. J. Merchant, R. H. Kahn and
W. H. Murphy, Jr.
188 pp.

Burgess Publ. Cy.
Minneapolis 15, Minn.
Price: \$ 4.00

The present book is a laboratory guide which has grown from a course given to students at the University of Michigan since 1953. It consists almost entirely of concise descriptions of techniques and procedures, presented partly in the form of laboratory exercises. Key references are given for each field of investigation. There are no illustrations.

"A GUIDE TO THE STUDY OF DEVELOPMENT"

1960

by W. W. Newby
217 pp., 79 figs.

W. B. Saunders Company
Philadelphia, London

Essentially, this is a laboratory guide for the study of descriptive embryology, based on the chick and the pig. However, the laboratory exercises alternate with chapters on the physiology of development, which also include many data on other animal forms. These chapters contain descriptions of experiments with various egg types, which may be performed as demonstrations.

The laboratory exercises are very sparsely illustrated. On the other hand, the general chapters and those on the physiology of development are illustrated with numerous line drawings of very good quality.

There are very useful chapters on abnormal development and twinning, and on embryology and evolution. No literature references are given. The book is concluded by a subject index.

The book is printed in photo-offset, and paper-bound.

"A MANUAL OF ORAL EMBRYOLOGY AND MICROSCOPIC ANATOMY"

2nd edition, 1959

by D. Permar
121 pp., 59 figs.

Lea & Febiger
Philadelphia, Pa.
Price: \$ 5.50

The first edition of this book appeared in 1955. This is a revised edition. The book has been written for first-year dentistry students. Its main organization is in three sections, viz. embryonic development of the face and oral cavity (9 pages), oral histology (with an introduction to general histology; 77 pages), and tooth development, eruption and shedding (17 pages).

The book contains good photographs, but most of the drawings are done by a rather primitive technique. Particularly in the very elementary first

section, the student will encounter difficulties in visualizing the developmental processes, on account of the lack of good illustrations.

Literature references are not given. The book is concluded by a subject index.

* * *

"SEX DIFFERENTIATION AND DEVELOPMENT"

1960

Editor: C. R. Austin
(Memoirs of the Society of
Endocrinology, no. 7)
198 pp., 15 figs., 9 pls.

Cambridge University Press
Price: 45 s.

This is a report of a symposium held in London in 1958. The symposium had 38 participants, the majority being British scientists. The report consists of 16 papers, each followed by a bibliography, and most of them by a short group discussion. Much of the assembled information has not been published previously.

The subject is treated in a comparative way, with the adduction of data from many classes of animals, and from the bacteria. The principal topics are: mechanisms of sex determination, differentiation of germ cells, manifestations of sex (including sexual behaviour), and sexual anomalies in man.

The book contains a limited number of good illustrations. It is concluded by animal name and subject indexes.

Authors of papers: Amoroso (London), Beatty (Edinburgh), Bishop, M.W.H. (London), Bishop, P.M.F. (London), Butler (Harpenden, Herts), Carlisle (Plymouth), Dodd (St. Andrews), Ferguson-Smith (Glasgow), Hayes (London), Hoffenberg (Cape Town), Jackson (Cape Town), Jost (Paris), Klein (Strasbourg), Lennox (Glasgow), Lessof (London), Lewin (London), Mack (Glasgow), McWhirter (Oxford), Matthews (London), Parkes (London), Parrott (London), Polani (London), Stewart (Glasgow), Zuckerman (Birmingham).

"THE BIOCHEMISTRY OF DEVELOPMENT"

1960

by J. Brachet
(International Series of Monographs on
Pure and Applied Biology; Modern
Trends in Physiological Sciences
Division, Vol. 2)
320 pp., 133 figs.

Pergamon Press Ltd.
London, Oxford, New York, Paris
Price: 65 s.

The present monograph may be regarded as a supplement to the author's "Chemical Embryology" (1950). It is not meant as an exhaustive treatise, but only as an introduction into the recent advances made in the field, particularly useful for advanced students and teachers. The general plan of the book follows that of "Chemical Embryology". Recent findings made with the electron microscope are incorporated, but morphogenesis in unicellular organisms and plants have been left out on account of size limitations. No attempt has been made to cover the whole literature. The book contains numerous drawings, graphs and photomicrographs. It is concluded by author and subject indexes.

"LA CULTURE DES TISSUS VÉGÉTAUX
techniques et réalisations"
1960

by R. J. Gautheret
883 pp., 438 figs.

Masson et Cie.
Paris

The culture of plant tissues is a comparatively new field. Its founder, Prof. Gautheret, published his first book on the subject in 1945. This is now followed by the present, much larger work.

The book opens with a section dealing with techniques (205 pages). Then follow sections on morphogenesis (273 pages), polarity and induction (163 pages), physiology of cultured tissues (162 pages), culture of isolated cells (9 pages), and the relation between tissue culture and plant pathology (55 pages). An appendix deals with the application of statistical tests.

The culture of whole plant embryos is not discussed in this book. There is only a brief discussion of some possibilities of culturing certain parts of embryos, which sometimes produce better cultures than differentiated tissues.

The book is richly illustrated. It is concluded by a bibliography of nearly 1000 titles, and by indexes to authors, plant names and subjects.

"RADIOGRAPHIC ATLAS OF SKELETAL DEVELOPMENT
OF THE HAND AND WRIST"

2nd edition, 1959

by W. W. Greulich and S. I. Pyle
256 pp.

Stanford University Press
Stanford, Calif.
Price: \$ 15.00

This is a completely revised edition of a book of which the first edition of 1950 has long been out of print. The book is concerned only with the postnatal development of the human hand, regarded as a standard for the determination of the developmental status of a child. For this reason it will be almost exclusively of interest to the medical profession.

The technical execution of the book is excellent, and its price is comparatively low.

"MALFORMATIONS CONGÉNITALES DU CERVEAU"

1959

Editors: G. Heuyer, M. Feld and
J. Gruner
(Colloque International sur les
Malformations congénitales de
l'encéphalie)
450 pp., 231 figs., 8 tbs. and
1 pl. in colour

Masson et Cie.
Paris

The present volume contains the proceedings of an international symposium on the congenital malformations of the brain. The book consists of 28 papers, discussing the problems under consideration from anatomical, clinical, physio-

logical, descriptive embryological and experimental embryological viewpoints. Naturally the discussions centre around mammalian (more especially human) development. The most important results of the experimental embryology of the vertebrate nervous system are expounded in an introductory contribution by Prof. Et. Wolff (23 pages).

Each contribution is followed by a bibliography. The book contains many illustrations (chiefly photographs).

Authors of papers: Ajuriaguerra (Paris), Ariens Kappers (Groningen), Bargeton (Paris), Bonis (Paris), Dureux (Nancy), Eicke (Marburg/Lahn), Feld (Paris), Foncin (Paris), Frauchiger (Bern), Frézal (Paris), Girard (Lyon), Giroud (Paris), Gros (Montpellier), Gross (Vienne), Gruner (Strasbourg), Heuyer (Paris), Hoff (Vienne), Jacob (Hamburg), Kissel (Nancy), Labauge (Montpellier), Lafon (Montpellier), Lamy (Paris), Lund (Bonn), Minkowski (Zürich), Thomas (Paris), Tridon (Nancy), Tusques (Nantes), Vlahovitch (Montpellier), Wolff (Paris), Zülch (Cologne).

"DAS FORMPROBLEM IN DER BIOLOGIE"

1958

by H. Homma
50 pp., 2 figs.
(paper bound)

Springer Verlag
Wien
Price: \$ 1.20

The content of this essay is of mainly theoretical significance. On the basis of data supplied by developmental mechanics the author speculates about what he calls "formative energy"¹⁾, which would be responsible for the establishment of form in organisms. This formative energy would show a maximum in the zygote, and a minimum in somatic cells of higher animals. Criteria are given for the establishment of the level of formative energy in various types of cells. Formative processes are distinguished from proliferative processes. Tumour cells would be characterized by presence of the latter and absence of the former.

"NORMAL AND ABNORMAL DIFFERENTIATION AND DEVELOPMENT"

1960

Editor: N. Kaliss
(National Cancer Institute
Monograph, no. 2)
187 pp., 9 pls.

National Cancer Institute
Bethesda, Md.
Price: \$ 1.25

The present monograph embodies the proceedings of a Symposium held at Bar Harbor, Maine, in June, 1959, on the occasion of the 30th anniversary of the Roscoe B. Jackson Memorial Laboratory. The Symposium was in three sessions. The first session contains papers on "Biochemical embryology and genetics", on "Disaggregation and reaggregation of early chick embryos", and on "Metabolic mechanisms of teratogenic agents during morphogenesis". The second session ("Immunology") contains, among other things, a paper on

¹⁾ a vague concept hardly open to causal analysis (the reviewer).

"Ontogenesis of the immune response". The third session deals with the biology of cancer.

The discussions following the papers in the actual Symposium are not recorded in the book. The book contains a number of good photographic plates.

Authors of papers: Brues (Lemont, Ill.), Clifton (Boston, Mass.), Dagg (Bar Harbor, Me.), DeLanney (Crawfordsville, Ind.), Ebert (Baltimore, Md.), Furth (Boston, Mass.), Greene (New Haven, Conn.), Kim (Boston, Mass.), Korngold (New York), Markert (Baltimore, Md.), Runner (Bar Harbor, Me.), Winn (Bar Harbor, Me.), Zwilling (Waltham, Mass.).

"LA BIOLOGIE DES HOMOGREFFES" ¹⁾

1958

Organized by: R. Kourilsky, R. M. May
and G. Voisin

Centre National de la
Recherche Scientifique
Paris

(Colloque International du Centre
National de la Recherche Scientifique,
78, à Paris, 1957)
284 pp., 86 figs.

Price: 22 N.F.

This book contains the papers read at a symposium held in Paris in 1957. The symposium had 41 participants from eight countries.

The book contains 20 papers, grouped in three sections, of which that on "homogreffes et embryologie" is of particular interest to embryologists. The two other sections are headed "biologie générale des homogreffes" and "homogreffes et immunologie".

Each paper is followed by a bibliography, and some also by a short group discussion. The book is illustrated with graphs and photographs.

Authors of papers: Algire (Bethesda, Md.), Allgower (Chur-Coire), Aron (Strasbourg), Billingham (Philadelphia, Pa.), Converse (New York), Gaillard (Leiden), Gorer (London), Greene (New Haven, Conn.), Hašek (Prague), Kaliss (London), Lacroix (Louvain), Levi-Montalcini (St. Louis, Mo.), Maurer (Paris), May (Paris), Medawar (London), Rogers (New York), Simonsen (Copenhagen), Thillard (Paris), Voisin (Paris), Wolff (Paris), Woodruff (Edinburgh).

"STUDIES ON THE BRAIN DEVELOPMENT OF THE KIWI, Apteryx Mantelli"

1959

by K. H. Krabbe
(Morphogenesis of the vertebrate
brain, VIII)
24 pp., 17 figs.

Ejnar Munksgaard
Copenhagen
Price: D. Cr. 20.00

This monograph is the eighth in a series of studies by the same author started in 1939. It contains a description of the brain of one isolated embryo of this species, of which embryonic material is difficult to obtain.

The work has fine plates.

¹⁾ "Homogrefe" = English "homograft" = a graft between two individuals of the same species.

"PHYSIOLOGY OF PREMATURITY"

1959 and 1960

Editor: J. T. Lanman
(Transactions of the third and
fourth conference)

3rd: 147 pp., 56 figs.
4th: 187 pp., 58 figs., 58 tbs.

Josiah Macy, Jr. Foundations
New York

Price: \$ 3.00 (3rd)
\$ 4.50 (4th)

These two reports continue the series announced in the supplement to the seventh issue (p. 22) and in the eighth full issue (p. 242). The first report contains group discussions on the physiological chemistry of premature fetuses (particularly bile pigment metabolism). The second report consists of discussions on several aspects of the physiology of the fullterm or premature infant.

Participants of the 3rd conference: Arias (New York), Barron (New Haven, Conn.), Boell (New Haven, Conn.), Brown (Detroit, Mich.), Clark (Baltimore, Md.), Clifford (Boston, Mass.), Danoff (New York), Day (Brooklyn, N.Y.), Gellis (Boston, Mass.), Hagerman (Boston, Mass.), Holt (New York), Johnson (Brooklyn, N.Y.), Kretchmer (New York), Lanman (New York), Lathe (Leeds), Leopold (Philadelphia, Pa.), Levine (New York), Lucey (Burlington, Vt.), Najjar (Nashville, Tenn.), Nemeth (Philadelphia, Pa.), Parks (Washington, D.C.), Schmid (Boston, Mass.), Smith (Boston, Mass.), Villee (Boston, Mass.), Wilson (Ann Arbor, Mich.), Zimmerman (New York), Zuelzer (Detroit, Mich.).

Participants of the 4th conference: Adolph (Rochester, N.Y.), Barnett (New York), Barron (New Haven, Conn.), Boell (New Haven, Conn.), Calcagno (Buffalo, N.Y.), Clifford (Boston, Mass.), Fitzgerald (New York), Forbes (Rochester, N.Y.), Fuhrman (Stanford, Calif.), Hardy (Philadelphia, Pa.), Horvath (Philadelphia, Pa.), Lanman (New York), Levine (New York), Metcalf (Chicago, Ill.), Miller (Atlanta, Ga.), Reynolds (Chicago, Ill.), Silverman (New York), Smith (Boston, Mass.), Villee (Boston, Mass.), Wallace (Cleveland, Ohio), Widdowson (Cambridge), Wolf (Chicago, Ill.).

"RECENT PROGRESS IN THE ENDOCRINOLOGY OF REPRODUCTION"

1959

Editor: Ch. W. Lloyd
(Proceedings of the Conference
held in Syracuse, N.Y.,

June 9-12, 1958)

532 pp., 163 figs.

Academic Press Inc.
New York and London
Price: \$ 12.00

The present volume contains the proceedings of a Conference held in Syracuse, N.Y., in 1958. Of the 34 participants 18 came from the U.S.A., 9 from the United Kingdom, 6 from Australia and Canada and 1 from Germany. The participants were both basic medical investigators and clinicians. The book contains 23 papers, of which at least half are of interest to embryologists. The range of subjects covered runs from ovulation to lactation.

All papers are followed by a bibliography and a group discussion. This well-printed book is concluded by author and subject indexes.

Authors of papers: Beach (Morris Plains, N.J.), Beck (Montreal), Benson (Reading), Böving (Baltimore, Md.), Brown (Edinburgh), Chang (Shrewsbury, Mass.), Cowie (Reading), Cross (Cambridge), Elton (Chicago, Ill.), Fernandez-Cano (Shrewsbury, Mass.), Folley (Reading), Hagerman (Boston, Mass.), Harris (London), Heller (Bristol), Kroc (Morris Plains, N.J.), Leatham (New Brunswick, N.J.), McArthur (Boston, Mass.), Macfarlane

(Brisbane), Nelson (New York), Pennycuik (Brisbane), Romanoff (Shrewsbury, Mass.), Saunders (Chicago, Ill.), Sawyer (Long Beach, Calif.), Segal (New York), Steinetz (Morris Plains, N.J.), Stone (New York), Thrift (Brisbane), Tindal (Reading), Troen (Boston, Mass.), Venning (Montreal), Villee (Boston, Mass.), Yeates (Brisbane), Zander (Cologne), Zuckerman (Birmingham).

"BIOCHEMISTRY OF MORPHOGENESIS"

1959

Editor: W. J. Nickerson
(Proceedings of the IVth International
Congress of Biochemistry, Vienna,
1958; Vol. VI, Symposium VI;
I.U.B. Symposium Series, Vol. 8)
259 pp., 89 figs.

Pergamon Press Ltd.
London, New York, Paris,
Los Angeles
Price: 70 s.

This volume contains the papers presented at a Symposium held as a part of the IVth International Congress of Biochemistry in Vienna in 1958. The Symposium had 30 participants, 13 whom came from the U.S.A. The papers cover morphogenesis in plant, animal and microbial systems. They are arranged in the following sections: "Biochemical control of differentiation in isolated cellular systems" (6 papers); "Regulation of differentiation in the developing organism" (7 papers); "Protein synthesis and cellular differentiation" (6 papers); and "Experimental systems for the study of biochemistry of morphogenesis" (4 papers). A final chapter consists of a synthetic report on the entire Symposium by the editor, occupying 18 pages. The book contains many diagrams and photographs.

Participants: Biggers (London), Brown (Edinburgh), Burström (Lund), Cantino (East Lansing, Mich.), Chaylakhyan (Moscow), Eagle (Bethesda, Md.), Edds (Providence, R.I.), Falcone (Naples), Fowden (London), Gale (Cambridge), Herrmann (Denver, Colo.), Hoagland (Boston, Mass.), Lang (Los Angeles, Calif.), Løvtrup (Göteborg), Lucy (Cambridge), Melchers (Tübingen), Morel (Versailles), Nickerson (New Brunswick, N.J.), Nitch (Gif-sur-Yvette), Paul (Glasgow), Pollard (Ithaca, N.Y.), Rutter (Urbana, Ill), Ranzi (Milan), Shantz (Ithaca, N.Y.), Steward (Ithaca, N.Y.), Street (Swansea), Ten Cate (Amsterdam), Ward (Philadelphia, Pa.), Webb (Cambridge), Zamenhof (New York).

"MICRORADIOGRAFIA OSSEA,

sviluppo e accrescimento dello

scheletro umano;

cranio e colonna vertebrale"

1955

by G. Prevedi and M. Marcato
144 pp., 70 figs.

L. Cappelli
Bologna
Price: 3000 L.

Although this monograph is already five years old, a review is still considered appropriate, because the book appears to be the first of a series which will cover the whole of the human fetal skeleton. The present book deals only with the skull and the vertebral column. It is in the form of an atlas consisting of 70 high-quality X-ray photomicrographs, which together constitute

a picture of the ossification and growth of the various bones concerned. The material consisted of 50 fetuses, which were dissected in order to permit microradiography of the individual bones.

Although we do not underestimate the difficulties of writing in a foreign language, we think that it would have been a great advantage if this important work could have been written in a language which is more widely known than Italian.

It is a pity that a table of contents and a list of illustrations are lacking. Unfortunately the bibliography contains many printing errors, particularly in the foreign titles and authors' names.

"THE AVIAN EMBRYO,
structural and functional development"

1960

by A. L. Romanoff
1305 pp., 426 figs.

The Macmillan Company
New York
Price: \$ 35.00

This compilatory monograph is a complementary volume to "The avian egg" by Romanoff and Romanoff (1949). It is an effort to bring together in one volume all the known scientific facts about the structural and functional development of birds. The book is based on a critical study of more than 7000 original publications, of which 2700 are cited in the text. The book thus contains an enormous wealth of information, supplemented by more than 2250 drawings. The latter are either original or redrawn after other authors. Although they are on a relatively small scale (which is unavoidable in a book of this kind), they are of outstanding quality and exhibit a remarkable unity of style. Moreover they are labelled in a clear and uniform way. The printing of the book is beautiful and clear.

Nine chapters dealing with the various organ systems are preceded by chapters on "reproductive cells", "fertilization and fertility" and "early morphogenesis", and followed by a final chapter discussing the extraembryonic membranes. Each chapter is preceded by a diagram, summarizing the morphogenetic interrelations which play a part in the development of the system concerned. An appendix contains tables and figures summarizing all kinds of numerical data. The book is concluded by an extensive subject index.

In accordance with the scope of the book the data relating to the causal analysis of development are treated rather briefly. To compensate for this the author could have referred to an important book like Waddington's "The epigenetics of birds", which, however, is lacking in the bibliography. The same holds for Hamilton's revision of Lillie's "Development of the chick", only the original edition of this book being listed.

"ANOMALIES DES AMPHIBIENS ANOURES"

1958

by J. Rostand
100 pp., 84 figs.
(paper bound)

Société d'Éditions
d'Enseignement Supérieur
Paris

The first 16 pages of this monograph contain 11 descriptions and brief discussions of various anomalies, mainly affecting the limbs, and occurring in

larvae and adults of various anuran species. The main part of the book is occupied by 84 photographs illustrating the cases discussed. From the viewpoint of photographic and reproductive technique the majority of the illustrations are not very satisfactory. The book is concluded by a short bibliography and a list of illustrations.

"PLANT MORPHOGENESIS"

1960

by E. W. Sinnott
550 pp., 216 figs.

McGraw-Hill Publ. Cy.
New York, Toronto, London
Price: 97 s.

This important book is the first attempt to synthesize the various aspects of plant morphogenesis. Recent expansion in this subject has made such a synthesis imperative.

The author has been active in this field for more than 40 years. He has designed his book primarily as a reference work, but there is nevertheless a central problem which pervades the whole book, viz. that of "biological organization", which the author considers the most important problem in contemporary biology. Increasing numbers of biologists have come to realize that this fundamental problem should be attacked by botanists and zoologists working closely together. Many zoologists will feel obliged to the author for having provided them with a means of quick orientation in the field of plant morphogenesis.

Throughout the book the emphasis lies on the "postembryonic" phases of plant development. This is obviously a consequence of the fact that there exists already an excellent book dealing with the descriptive and experimental aspects of the strictly embryonic phase, viz. Wardlaw's "Embryogenesis in plants" of 1955. These two books complement each other, and a really comprehensive view of the field of plant morphogenesis can only be obtained by studying both.

In the present work the subject matter has been organized in three major parts. The first part deals with growth and its cellular and meristematic basis. The second part discusses the phenomena of morphogenesis, viz. correlation, polarity, symmetry, differentiation, regeneration, tissue mixtures (chimeras etc.), and abnormal development. The third part finally discusses the various physical, chemical and genetical factors involved in morphogenesis. A separate section is devoted to growth substances. The book is rounded off by a general chapter on biological organization.

It is particularly the second part of the book, and more specifically such sections as that on regeneration and that on abnormal growth (galls!), which provide fascinating reading for anyone concerned with developmental biology.

The book has a selected, but still extensive bibliography which contains important older titles as well as a large number of the most recent ones. A considerable number of review papers have been included.

The book is concluded by author and subject indexes. It is well illustrated and well printed.

"NEUE BEITRÄGE ZUR ENTWICKLUNGSMECHANIK DER NEMATODEN"

1959

by O. zur Strassen
(Zoologica, Band 38, Lieferung 3,
Heft 107)
142 pp., 139 figs.
(paper bound)

E. Schweizerbart'sche
Verlagsbuchhandlung
Stuttgart

This monograph contains a wealth of descriptive data on the development of a large number of Nematode species, based on extremely careful observations. The descriptive parts certainly are the most valuable aspect of the book, which is richly illustrated with line drawings.

The experimental approach is lacking entirely. Consequently most of what is presented as explanation and interpretation of developmental events is of a highly speculative nature.

"GESTATION"

1959

Editor: C. A. Villee
(Transactions of the fifth Conference)
262 pp., 114 figs.

Josiah Macy Jr. Foundation
New York
Price: \$ 5.75

This report is a sequel to the series of reports announced in the seventh full issue (p. 216) and the eighth full issue (p. 246). It contains reports and discussions on the (comparative) biology of the placenta, circulation in the placenta, venous drainage from the uterus, and genetic factors in prolonged gestation in cattle, and finally a general group discussion, touching upon a variety of subjects concerning the placenta and the fetal membranes.

Participants: Allen (St. Louis, Mo.), Amoroso (London), Barron (New Haven, Conn.), Benirschke (Boston, Mass.), Bieniarz (Gdansk), Bourne (London), Burwell (Boston, Mass.), Davies (St. Louis, Mo.), Dempsey (St. Louis, Mo.), Flexner (Philadelphia, Pa.), Hartman (Raritan, N.J.), Hendricks (Cleveland, Ohio), Holm (Davis, Calif.), Levine (Raritan, N.J.), Mossman (Madison, Wis.), Page (San Francisco, Calif.), Ramsey (Baltimore, Md.), Reid (Boston, Mass.), Reynolds (Chicago, Ill.), Richter (Baltimore, Md.), Romney (New York), Stone (Bethesda, Md.), Villee (Boston, Mass.), Vosburgh (New York), Wimsatt (Ithaca, N.Y.).

"ASEXUAL PROPAGATION AND REGENERATION"

1960

by M. A. Vorontsova and
L. D. Liosner
489 pp., 210 figs.

Pergamon Press
Oxford, London, New York, Paris
Price: 70 s

This book is a translation from the Russian. It is based on a course of lectures given at Moscow University by the first author. The book combines information on regeneration and on asexual propagation (a better name for the latter field would probably be "somatic embryogenesis"). These two fields are closely related, their common basis being development starting from somatic (non-sexual) cells.

The book is in three parts, of which the first two (on "asexual reproduction" and "physiological regeneration" respectively) occupy about one quarter of the book. The third part is concerned with "reparative regeneration". Throughout the book the subject matter is organized strictly according to taxonomic groups. Furthermore each part contains one or two general sections. The third part is preceded by a historical outline.

In the opinion of the reviewer the chief interest of the book is in its systematic set-up, and in the fact that it discusses a wealth of Russian literature which is as a rule not immediately accessible to western readers. A further notable feature of the book is the extensive treatment of organ regeneration in mammals. Naturally, the balance is strongly towards Russian literature, particularly in part three, but it must be said that as a consequence some western scientists are not given fair treatment at all.

According to a publisher's note the topicality of the book has necessitated reproduction of the text by photo-lithography in order to save time. Apart from the resulting very small letter type, which makes reading very tiring, this haste has had some further unpleasant consequences. There are many small typographical and editorial errors and inconsistencies, but the worst flaw consists in numerous grave anomalies in the spelling of authors' names. These have apparently resulted from retransliteration of names originally transliterated into Russian. A few of the worst examples are: Abelo for Abeloos, Ampet for Hampé, Dreisch for Driesch, Gertvig for Hertwig, Tsvilling for Zwilling. Some of the mistakes occur again in the bibliography, while others do not.

Looking at the bibliography one notices that the most recent titles date from 1956. The system of bibliographical references is open to serious criticism. The bibliography is nothing more than an appendix listing some of the most important titles for each particular section. One searches in vain for further bibliographical data of innumerable references in the text. This is particularly serious in a field like regeneration, where there exists so much controversy that it is absolutely necessary to be able to go to the sources. Moreover, this feature of the book greatly reduces its value as a guide into Russian literature, and as a reference work in general.

The numerous illustrations are of heterogeneous quality. The usefulness of a number of figures may be doubted, the more so since in several instances the legends and the labelling are definitely lacking in clarity. The authors of the figures are mentioned, but no bibliographical data are given. The book is concluded by an alphabetical index, but an author index is lacking.

"BIOLOGICAL ORGANISATION, cellular and sub-cellular" 1959

Editor: C. H. Waddington
(Proceedings of a Symposium, organised on behalf of U.N.E.S.C.O., held at the University of Edinburgh, September 1957)
328 pp., 84 figs.

Pergamon Press
London, New York, Paris,
Los Angeles
Price: 70 s.

This interesting and stimulating book is the outcome of a Symposium organised on behalf of UNESCO by Prof. C. H. Waddington. It took place at the University of Edinburgh in September, 1957. This appears to have been a Symposium in the truest sense of the word: a totally informal gathering of a limited number (27) of leading specialists. No papers were read, but the meeting was prepared by circulating bibliographies and short accounts of new factual data by all participants. The discussion proceeded according to a rather detailed plan, which serves as an introduction to the book. The rest of the book consists of slightly adapted taperecordings of the actual proceedings.

These are divided into 11 chapters, dealing with all levels of organization from the sub-cellular (gene, chromosome, nucleus, cytoplasm) through the cellular to the supra-cellular level, and rounded off by chapters on growth regulation and cell division.

Much of the illustrative material presented at the meeting is used to illustrate the book. All chapters have a short bibliography. The book is concluded by a speakers', a subject and an authors' index.

Participants: Beale (Edinburgh), Beermann (Marburg/Lahn), Berenblum (Rehovoth), Brachet (Auderghem), Brenner (Cambridge), Callan (St. Andrews), Dan (Tokyo), Dean (Oxford), Gall (Minnesota), Gay (Long Island, N.Y.), Gustafson (Stockholm), Holtzer (Pennsylvania), Lehmann (Bern), Mitchison (Edinburgh), Nieuwkoop (Utrecht), Pavan (S. Paulo, Brazil), Plaut (Wisconsin), Pollock (London), Pontecorvo (Glasgow), Ris (Wisconsin), Rusch (Wisconsin), Sjöstrand (Stockholm), Toivonen (Helsinki), Waddington (Edinburgh), Weiss (New York), Wilde (Pennsylvania), Zwilling (Washington, D.C.).

"OXYGEN SUPPLY TO THE HUMAN FOETUS"

1959

Editors: J. Walker and A. C. Turnbull
(a C.I.O.M.S. Symposium)
313 pp., 132 figs.

Blackwell Scientific
Publications Ltd.
Oxford
Price: 47 s. 6 d.

This volume embodies the proceedings of a symposium organized by C.I.O.M.S. and the Macy Foundation at Princeton, N. J., in December 1957. The subject-matter of the symposium appears to be mainly of interest to obstetricians and medical physiologists, but those interested in fetal physiology in general will find useful data in the papers dealing with oxygen transfer from maternal to fetal blood, characteristics of the blood in fetal life, and vascular anatomy of utero-placental and fetal circulation.

Authors of papers: Bartels (Tübingen), Kaplan (Cincinnati, Ohio), McClure Browne (London), MacKinney (Chapel Hill, Carolina), Metcalfe (Boston, Mass.), Minkowski (Paris), Prystowsky (Gainesville, Florida), Ramsey (Baltimore, Md.), Romney (New York), Rooth (Lund), Scholander (La Jolla, Calif.), Schulman (Chicago 14, Ill.), Turnbull (Dundee), Van Slyke (Upton, N.Y.), Walker (Dundee).

"THE CONTROL OF GROWTH AND FORM,

A study of the epidermal cell in an insect"

1959

by V. B. Wigglesworth
140 pp., 47 figs.

Cornell University Press
Ithaca, N.Y.
Price: \$ 3.00

The six essays forming this monograph are based on the "Messenger Lectures" given by the author at Cornell University in 1958.

The word "growth" in the title is not to be taken in a strict sense. It is rather used as a synonym of "development" or "differentiation". The word "form" in the title is equivalent to "morphogenesis". The author bases his work on the assumption that physiological control of cellular differentiation and morphogenesis acts through principles common to all animals. It has been his

aim to discuss these principles on the basis of what is known about the epidermal cell of *Rhodnius*.

The six chapters of the book are entitled respectively: The epidermal cell; The capacity for differentiation; Hormones and the control of growth; Hormones and the control of form; Polymorphism; The integration of growth. Much of the material presented is to be found already in the author's book "The physiology of Insect metamorphosis" of 1954, and is presented here only in brief outline. The stress is on general conceptions which may be valid also for other organisms. Particularly in the last chapter a number of interesting theoretical speculations are presented, concerning biological organization in general.

Many of the illustrations, particularly among the photographic plates, are not to be found in the older book. This well-printed book is concluded by a bibliography of 120 titles and a short alphabetical index.

"NATÜRLICHE MEHRFACHBILDUNGEN AN FROSCHEXTREMITÄTEN"

1959

by A. A. Woitkewitsch
82 pp., 56 figs.
(paper bound)

Gustav Fischer Verlag
Jena
Price: 16.85 DM

This monograph, translated from the Russian, contains careful descriptions and extensive discussions of a peculiar class of anomalies, concerning exclusively (!) the right hind limb region of the frog *Rana ridibunda*. The extensive material which forms the basis of the monograph was collected from a number of similar, but partly unconnected mountain waters. The anomalous animals were sometimes found in very large numbers. The phenomenon is probably not hereditary. It may be connected with developmental retardation owing to low temperatures.

One of the 11 chapters deals with the development of these anomalies, while another one reports on some regeneration experiments on anomalous limbs.

The book contains a large number of photographs and drawings. It is concluded by a bibliography of more than 200 titles.

"CONGENITAL MALFORMATIONS"

1960

Editors: G. E. W. Wolstenholme and
C. M. O'Connor
(A Ciba Foundation Symposium)
308 pp., 90 figs.

J. & A. Churchill Ltd.
London
Price: 45 s.

This book is particularly of interest to those engaged in research on mammalian (more especially human) congenital abnormalities. The Symposium on which it reports took place in January of this year, with the participation of 29 scientists, 18 of which came from the United Kingdom. The majority of the participants work in medical institutes, and as might be expected, the main

stress is on the medical aspects of the problem, particularly in the group discussions following the papers.

The book contains 12 papers with group discussions, and a final general discussion. It is concluded by authors' and subject indexes. The book is well printed.

Authors of papers: Ford (Harwell), Giroud (Paris), Hamilton (London), Hoet (Louvain), Ingalls (Pennsylvania), McKeown (Birmingham), McLaren (Edinburgh), Millen (Cambridge), Murphy (New York), Nelson (San Francisco, Calif.), Penrose (London), Record (Birmingham), Stevenson (Oxford), Tuchmann-Duplessis (Paris), Woollam (Cambridge).

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